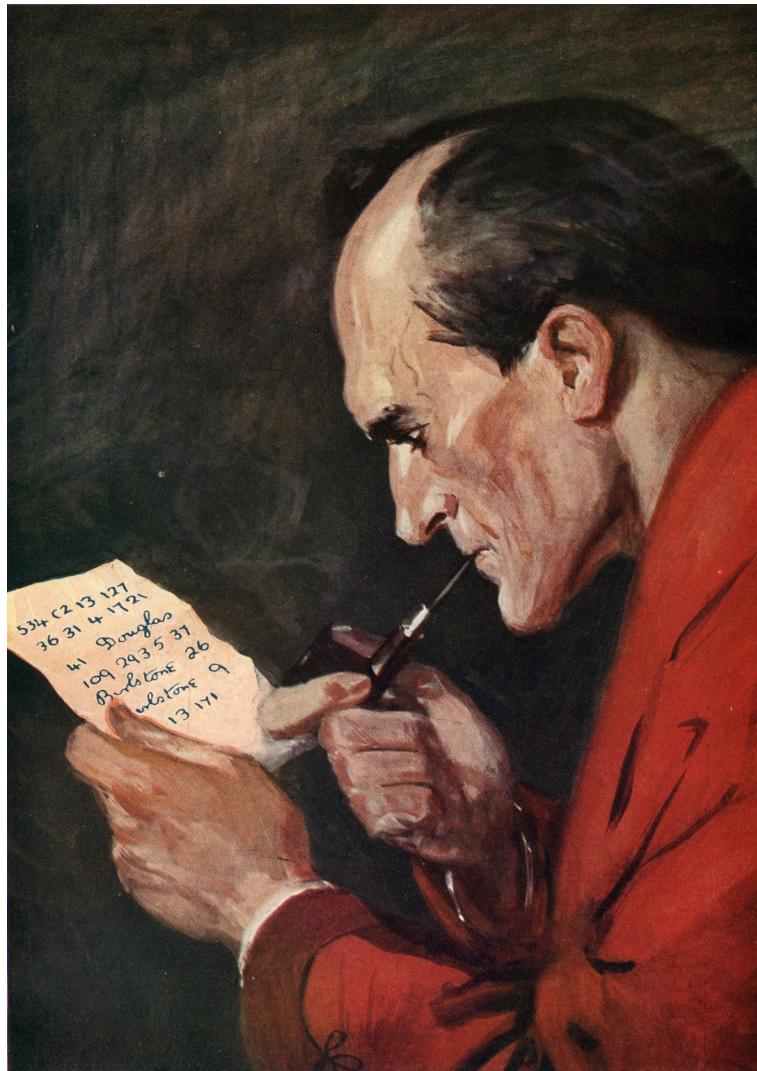


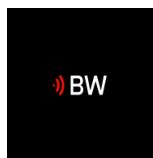
# Introducing Competitive Intelligence For Broadcasters



Written By  
David Childers

*[www.ScenicRadio.Com](http://www.ScenicRadio.Com)*

Relaxing Entertainment For The World



*[www.BroadcastingWorld.Com](http://www.BroadcastingWorld.Com)*  
Global Broadcast Information Portal

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## About The Author

"My brain is only a receiver. In the Universe there is a core from which we obtain knowledge, strength, inspiration. I have not penetrated into the secrets of this core, but I know it exists."

Nikola Tesla

David Childers is the Content Manager for the Global Broadcasting portal [www.BroadcastingWorld.com](http://www.BroadcastingWorld.com). He is very active in the Internet broadcast industry and has written numerous guides and a book about this growing technological field. He is also the webmaster of [www.ScenicRadio.com](http://www.ScenicRadio.com), the global destination for relaxing entertainment.

Mr Childers is a self-confessed computer nerd who enjoys the mystical powers of the Unix bash shell. He first experienced radio broadcasting at Spring Hill College student radio station WTOH. The late night rock and roll radio shows left an indelible mark. The establishment of the Internet as a global communications medium peaked his interest, and the rest is history.

Mr. Childers' work has been cited in several national and International publications, including these:

Five Essays on Copyright In the Digital Era  
Turre Publishing

Research On High-Profile Digital Video Production  
Digital Content Association of Japan

Video Podcasting in Perspective: The History, Technology, Aesthetics and Instructional Uses of a New Medium  
Journal of Educational Technology Systems

Video Podcasting: When, Where and How it's Currently used for Instruction  
The National Convention of the Association for Educational Communications and Technology

Preservation of audiovisual mediums: Problems and challenges  
Platform for Archiving and Preservation of Art on Electronic and Digital Media  
Centre of Expertise in Digital Heritage

P2P Technology Trend and Application to Home Network  
Electronics and Telecommunications Research Institute Journal

Peer To Peer Computing - The Evolution of a Disruptive Technology  
Idea Group Publishing

Peer-to-Peer Systems and Applications  
Lecture Notes In Computer Science  
Springer Berlin / Heidelberg

You can read or download for free many Internet broadcasting guides published by David Childers here:  
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PDF edition:  
[www.scribd.com/doc/133662848/Introduction-to-Internet-Broadcasting](http://www.scribd.com/doc/133662848/Introduction-to-Internet-Broadcasting)

### **Feedback**

Please feel free to contact the author if you have any questions or comments. Your feedback is greatly appreciated.

You can contact the author here: [www.KL7AF.com](http://www.KL7AF.com)

## Foreword

Greetings,

Information is the key asset of any organization or business and is essential for guiding management and operational decisions. The ability to plan, execute, collect and analyze information requires knowledge of the fundamental principles for information operations. It is my hope that the reader can use the information presented here to help them understand the concepts and needs of competitive intelligence for business.

The musical inspiration for this guide is Gnomusy – Alexandra.

I would like to thank James Davey at Broadcasting World for allowing me the opportunity to create this guide.

It is my sincere hope that the reader finds this guide beneficial.

David Childers

[www.scenicradio.com](http://www.scenicradio.com)

November 2014

Posveèeno Neži Vidmar.



Ipsa scientia potestas est.

It is a capital mistake to theorize before one has data. Insensibly one begins to twist facts to suit theories, instead of theories to suit facts.

Sherlock Holmes

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## The Value Of Information

Why do we need information and why is it so important?

Information is useful as guidance for selecting a proper course of action or for making critical decisions. Individuals, organizations, businesses and governments require accurate information to ensure that all decisions made are based on reliable information. The ability to make sound decisions are based on the quality and relevance of the information obtained.

Information also has a value, and that can be determined by how much of a benefit the information is. Did the information assist you, your organization or business in achieving a goal? Did the information help you, your organization or business in saving money? Did the information help you, your organization or business in raising more money?

The ability to adequately research and collect specific information requires considerable skill. The individual must have the ability to formulate specific questions and seek specific answers. These same skills are used by news reporters when they are doing an interview. The news reporter must thoroughly understand all aspects of the story that they are covering and have the ability to ask many specific questions. Competitive intelligence is more than merely asking a few questions; it is the skill of researching and collecting information. This ability is based on scientific principles used by many of the intelligence services worldwide. It has become a significant function for many business operations to provide a competitive edge.

As a consumer, you look for the best prices and best quality of goods to be purchased. That is a form of competitive Intelligence. You use newspapers, magazines, and the Internet as sources of that information. These sources of information are publicly available and open to anyone. Business can also draw upon the same sources and types of information that are accessible to the public. Businesses can use this information to be aware of consumer trends, market trends and patterns that their customers follow. This information enables the business to stay profitable.

Publicly accessible information is readily obtainable and can be of great benefit to businesses without any negative legal ramifications. The ability to research and collect publicly available information is typically not an illegal activity. (**This depends greatly on where you live and the governing laws.**) Information that is retrieved from illegal sources, covered by Intellectual property rights or controlled by governmental mandates can, however cause severe repercussions for the information specialist.

### **The Purpose Of Competitive Intelligence**

The purpose of competitive intelligence is to support business owners and management in gaining an understanding of their business market trends, general business market trends, consumer market trends and competition market trends.

Information specialists ensure that the competitive intelligence activities operate effectively and efficiently. They are the business management's primary advisers on employing information research assets and directing information collection. Competitive intelligence specialists also support their business management with analysis and production of reports based upon the collection of information. These reports provide timely, relevant, accurate, and predictive assessments that are tailored to the business management specific information needs. The reports also help business management visualize the current business environment, organize their assets, and control operations to achieve their financial objectives. (1)

Decisions that affect the operation of the business are made on a frequent basis and include the following; advertising, promotion, product sales, store location and hours of operation. These decisions require factual information that is relevant and timely to provide the proper basis for making an informed decision. Basing business decisions on haphazard guesses or general assumptions can yield disastrous results that can lead to the loss of money.

## **Characteristics Of Effective Competitive Intelligence**

Several key characteristics are necessary to ensure that a quality information research and collection operation is performed.

### Accuracy

Competitive intelligence provides accurate, balanced, complete, and objective information.

### Timeliness

Competitive intelligence provides current information that can be used to support existing or future operations.

### Usability

Competitive intelligence should be available in the correct format required for storage, indexing, display and distribution.

### Completeness

Competitive intelligence presents all necessary information to ensure that the final report is as complete as possible.

### Precision

Competitive intelligence provides the required level of detail and complexity to satisfy the information needed.

### Reliability

An evaluation must be performed on the Competitive intelligence to determine if it is trustworthy, uncorrupted, and undistorted.

### Relevant

Competitive intelligence requires that the Competitive intelligence provide answers to the questions asked.

### Tailored

Competitive intelligence should be shared and disseminated in the format requested by the end user. It needs to support and satisfy the specific requirements of the information operation. **(2)**

## **Phases Of Competitive Intelligence Operations**

Competitive intelligence information operations have successive stages that allow the researched information to be refined. This refined information can then be used to provide a quality product to the end user.

### Planning

- Determine what information is needed.
- Determine which sources of information will be used.

### Collection

- Designate the process for collecting the required information.

### Processing

- Compile the collected information into a usable format for analysis.

### Evaluation

- Evaluate information products for accuracy, completeness and intelligence information requirements.

### Analysis

- Distill the evaluated information into a product that meets information requirements.

### Production

- Format the information product, so that is readily accessible to the designated end user.

### Distribution

- Distribute the information product to the designated end user.

### Feedback

- Provide a peer-reviewed feedback of the final product. This will review the report for accuracy, completeness and information requirements. **(3)**

## **Planning**

Developing specific information requirements form the foundation for information collection planning. These requirements involve several processes including the following:

### Participate In Planning

Throughout the planning phase, requirements are developed and refined. Some requirements are consolidated, and others are discarded. Business management can add and delete individual requirements throughout a competitive intelligence operation based on the information requirements that are needed for specific decisions.

The development of requirements begins as early as possible, and the development of the requirements continues as the information specialist staff collects initial (baseline) information from existing sources and databases.

Maximum efficiency in competitive intelligence is achieved when all the collection tasks are carefully synchronized throughout an information collection operation. This formulation of collection tasks helps satisfy as many different requirements as possible. It also reduces the likelihood of the information specialist staff favoring or becoming too reliant on one source or research method.

### Anticipate Requirements

The information specialist staff identifies new requirements or refines existing ones and present them to the business management for approval. The information specialist staff must recognize when and where to shift collection assets and make timely recommendations to the business management. Anticipating and developing new requirements requires a detailed understanding of the business and its operational capabilities. It also requires a thorough knowledge of existing information holdings.

The ability to anticipate competitive intelligence requirements gives the information specialist staff additional time to plan the use of collection assets. It requires a seamless involvement with the competitive intelligence operation planners and business management. Anticipating upcoming requirements allows the information specialist staff to communicate with business management and plan future requests for information. When more lead time is given to information specialist personnel, it is more likely they can obtain the required support for a specified time frame. A good example is forecasting additional support needed during critical events, such as business promotion or advertising campaigns.

### Analyze Requirements

The information specialist staff analyzes requirements to determine the most efficient use of information collection assets. Each requirement is analyzed to determine how best to satisfy it. Often, a newly received requirement can be satisfied by submitting a request for information. Analyzing requirements involves separating, recording, validating, consolidating and prioritizing each recommended requirement.

### Refine Requirements

The development of information requirements does not end with the business management approval of the information specialist request. Each requirement is further broken down into groups and indicators by the information specialist staff. This facilitates matching requirements to collection asset capabilities while developing the planning requirement tools. **(4)**

## **Collection**

This is the systematic exploitation of information sources to satisfy specific information requirements. Information collection encompasses assembling relevant information from sources that are already on hand or available from other sources such as Open Source Intelligence. The collected information is then submitted for processing. Activities that are carried out during the execution of collection operations include directing assets to sources that are favorable for satisfying information collection objectives.

Information is collected from a variety of research assets or sources, each with unique capabilities and limitations. The value of a collection source is not necessarily related to the sophistication or cost of that source, but rather to its ability to gather pertinent data from the collection target. Successful information research operations require access to data from all types of collection resources. It is important to collect data from all suitable and capable assets, balancing the capabilities of one type of collection method against the limitations of another to provide “all-source” data input to the processing phase. **(5)**

A failure to exploit every source of information may deny access to important information. The difficulties involved in obtaining adequate information and in arriving at reliable conclusions are many; thus it is important to exploit every possible information source that is available. **(6)**

The collection of information must be organized to provide speed and economy of effort. The necessity for accurate and complete information required by operational planning is of prime importance. **(7)**

## **Processing**

Processing the collected information allows the raw data to be transcribed, evaluated and analyzed. Processing provides information that can be used to create a comprehensive competitive intelligence report. **(8)**

Information processing consists of three steps, which include:

### Transcription

This consists of the conversion of collected information into a suitable form that can be readily used to produce competitive intelligence. Transcription includes data from conversion, photographic development, and translation of foreign language material.

### Evaluation

This consists of determining the relevance of the information, the reliability of the source, and accuracy of the information.

### Filtering

This consists of discarding irrelevant or repetitive information. **(9)**

### Analysis

This consists of developing intelligence through the evaluation, assessment, integration, and interpretation of the collected information. The results of the analysis attempt to answer the questions posed in the planning stage.

### Synthesis

This consists of piecing together different information and creating a coherent, meaningful, and organized perspective. It is based on an ongoing or previous analysis of various pieces of information and events. The synthesis of information determines the relationships that exist between the collected information rather than simply pulling it together. **(10)**

The processing of information is a continuous operation. The information specialist processes new information as it is received without waiting for additional information. Competitive intelligence derived from fragmentary information is essential, particularly during fast-moving business operations. Normally there is a time lag between the time of a planned business function occurring and the time the information becomes available so that the business management can react to it. Complete information about a target or a situation is seldom available. The information specialist continuously identifies information gaps and attempts to acquire information to complete, confirm, or refute fragmentary information. This acquired information must provide the business management with the ability to generate and apply business operational capacity. This helps the business management to achieve and retain the objective or initiative. **(11)**

## **Evaluation and Interpretation**

Items of information that have been transcribed and categorized must be subject to a review. This review should consist of a critical and systematic analysis to convert the information into data that can be used in the finalized report for the competitive intelligence document. This evaluated data must be free from irrelevant matter and ready for immediate use.

### **Evaluation**

This is the determination of the probable value of the information. The following factors should be considered when evaluating the information.

#### Clarity Of The Source

- Is the source of the information clear in the presentation of the facts.  
(Hidden meanings can be a double edged sword.)

#### Credibility Of The Source

- Is the source of the information accurate.
- Is the source of the information reliable.

#### Accuracy Of The Information

- Is the information confirmed or corroborated by other sources deemed as reliable.

#### Significance Of The Information

- Is the information new or a confirmation of previous information.
- Is the information needed immediately or does it have probable future value.

#### Relevance Of The Information

- Does the information completely answer the questions posed.

#### The Quality Of The Information

- Does the information provide the necessary detail for answering the questions posed. **(12)**

### **Interpretation**

This is the ability to determine the possible significance of evaluated information together with conclusions of its importance.

- What does the information mean in connection with what is already known.
- Does the information alter or add significance to existing information?
- Does the information tend to confirm the estimate of the situation; or does it change the assessment?

\* How is the assessment of the situation changed If the information does change the estimate of the situation? **(13)**

## **Analysis**

Information has a story to tell, and it can provide answers to questions. Analysis involves the application of reason and logic to find the answers inside information that has been collected.

### **Analytical Theories**

Most analytical theories begin with a proposition or premise. These theories act as a statement that may or may not be true.

#### Proposition Or Premise

This is a combination of evidence and assumptions which establishes the foundation for an argument, hypothesis, or conclusion.

Propositions can be categorized in several ways, which include:

##### \* Detailed

Specific information.

##### \* Abstract

An idea without having a physical or concrete information to back it up.

##### \* Observable

Observed or documented information.

##### \* Inferable

Conclusive information derived from multiple sources.

### Certainty And Fuzziness

Propositions have varying degrees of both certainty and fuzziness.

\* Certainty is the degree of belief in something.

\* Fuzziness is the measure of how well the known information matches the desired information.

### Apriori

This is a probability, in the absence of other information.

## **Applied Logic**

Intelligence typically deals with obscure data, and few facts, which can limit the information specialist's ability to apply formal logic in information analysis. There are, however, areas of applied logic that are most relevant to information analysis.

### Facts

A fact is a statement that has been demonstrated to be true.

### Opinions

When facts are unavailable, an analyst might use opinions. An opinion is what someone believes to be true, but it may or may not be true.

### Inferences

Inferences are conclusions drawn from facts and or opinions.

### **Reasoning**

This is the mental process that is used to study facts, opinions, and inferences. Analysts solve problems through deductive and inductive reasoning.

### Deductive

The process of drawing conclusions from one or more propositions or premises.

### Inductive

The process of arriving at conclusions based on evaluating facts or inferences.

### Tests Of Truth

Both inductive and deductive reasoning involves three basic tests of truth that information specialist employ to determine the truth of propositions.

#### Correspondence Test Of Truth

This test holds that the truth is a statement that corresponds to reality.

#### Coherence Test Of Truth

This test uses consistency with other ideas or facts to validate statements. Where direct access to the information objective is denied, the coherence test of truth becomes necessary. The coherence theory refers to how consistent different pieces of information are in relation to each other.

#### Pragmatic Test Of Truth

This test proposes that a given statement is true if it works in practice. **(14)**

## **Production**

The production of a competitive intelligence report requires the integration of all analyzed information into a comprehensive product for the end user. **(15)** The product must be created in a usable format, and it must contain all the information initially required by the planning. It is critically important to ensure that the product is timely, accurate, and tailored to information requirements of the business. Information specialists must strive to provide knowledge that includes the following: **(16)**

- References to justify opinions derived from analysis.
- Graphics to assist with the presentation of data when possible.
- Language that is technically comprehensive but is easily understood.
- Concise presentation of information.

## **Report Format**

Abstract: Write a brief description of the report (maximum 250 words) that summarizes the purpose of the operation, questions, sources, principal results, and conclusions.

Title Page and Table of Contents: Include the report title, names of contributors and date on the title page. Include a table of contents on the second page.

Research Questions: Clearly state the report objective. Explain what prompted the research, discussing the importance of the information in a greater context. Summarize business, market and consumer information from a background review that helps the reader understand the information presented.

Method: Describe the procedures used to collect data. Detail the sources used to collect data.

Data Summary: Present the data in tables, graphs and pictures. All graphics should be numbered and include a title with a caption.

Analysis and Results: Summarize the data and information analysis; as well as the results. Include statistical analysis of the data, if applicable.

Conclusions: Present the conclusions reached about the questions posed. Explain how these conclusions were derived based on the methodology and information analysis. The results and conclusions should flow smoothly and logically from the information. Compare the results with theoretical values, published data, commonly held beliefs, and/or expected results.

Discussion: This section is to put the conclusions into context. Discuss the correlation of findings with the information collected.

Acknowledgements: Credit those who assisted in the research, including individuals, businesses, and educational or research institutions.

References/Bibliography: List books, journal articles, web sites, and other communications used in your investigation or cited in your report in alphabetical order. Use the APA (American Psychological Association) format for references.

Journal article example:  
Dale, V.H. (1997). The Relationship Between Land-use Change and Climate Change. Ecological Applications, 7, 753 - 769.

Book example:  
Jackson, D.L. & L.L. Jackson. (2003). Farm as Natural Habitat: Reconnecting Food Systems with Ecosystems. Washington, D.C.: Island Press.

Website example:  
Anna Washenko, (2014) . SoundCloud looking to raise \$150 million at \$1.2 billion valuation . <http://www.rainnews.com/soundcloud-looking-to-raise-150-million-at-1-2-billion-valuation/>.

Data example:  
Radio Mundo web traffic, (Data range August 15 2014 to December 15 2014). Google Analytics. <http://www.google.com/analytics/web/>

## **Distribution**

Competitive Intelligence reports must be delivered to the proper individual or department in a timely manner so the information does not become outdated and useless.

Determining which method to be used in the distribution of the product is a function of several factors, which include:

- The purpose of the intelligence product.
- The urgency and relevance of the intelligence to ongoing business operations.
- The type and volume of the intelligence.
- The user's capability to receive intelligence products.
- The distribution means available. (**18**)

The competitive intelligence report can be typically delivered using several methods, which include:

- Personal contact.
- Courier delivery.
- Conferences. (**19**)
- Electronic means.

## **Peer Review**

A peer review is intended to uncover any technical problems or unresolved issues through the use of independent experts. It also ensures that the competitive intelligence operation activities are technically adequate, competently performed, properly documented, and satisfy established quality requirements. This information is then used to improve the competitive intelligence report so that it will reflect sound technical information and analyzes. It is conducted by qualified individuals who are independent of those that originated the work, but who are collectively equivalent in technical expertise (i.e., peers) to those who created the original work.

The peer review is an in-depth assessment of the assumptions, calculations, extrapolations, alternate interpretations, methodology, acceptance criteria, and conclusions pertaining to a specific scientific and/or technical work product. This process also includes the documentation that supports the work product. Peer review may provide an evaluation of a subject where quantitative methods of analysis or measures of success are unavailable or undefined; such as research and development. (20)

A Peer Review Record is the formal record of decision on the conduct of the peer review, and an explanation of how the peer review comments were addressed. It includes sufficient documentation for an uninvolved person to understand what actually happened and why. The Peer Review Leader (with the program manager if there is one) creates a separate, clearly marked peer review file section within the overall file for development of the work. Once the peer review is completed, it is the responsibility of the Peer Review Leader to ensure that the peer review record is filed and maintained with the content that is reviewed.

The peer review record should include all materials considered by the individual peer reviewers of the peer review panel, as well as their written comments and other input.

When deciding if particular materials should be included in the record, the Peer Review Leader should consider whether the materials would help reconstruct the peer review process and results at a later time. If the materials may be helpful, they should be part of the peer review record. (21)

The distinguishing characteristics of peer review include:

### Rigorous

Peer review asks the questions that the information specialists and their management must know to make good decisions.

### Formal And Documented

Peer reviews follow prescribed phases and general steps. The process is transparent so that other peers can follow the reasoning from the questions and the discussion of the results and recommendations.

### Objective Criteria

The evaluation criteria, data examined, and definition of evidence provided by specification of that criteria are the standards for judging a program or project. Criteria are specified prior to the review.

### Qualified And Independent Reviewers

In addition to being experts in the subject matter, significant relationships with the program are fully disclosed, and the reviewers are not so tied to the program that they would be widely perceived to provide biased opinions.

### Judgments

Views provided are related to objective evaluation criteria and associated questions established for the review. (22)

The peer review should concentrate on the following:

- Accuracy.
- Completeness.
- Analysis of content.
- Analysis conclusions.
- Content used.
- Content collection methodology used.
- Sources used.

## **Management**

A designated person should be placed in charge of each competitive intelligence information operation. This will ensure that the operation is not hampered by the influx of numerous people attempting to exert control over the operation.

All sourced information should be collected and forwarded to the designated person in charge. This will reduce the chance of information being lost or misdirected.

The designated person in charge should catalog, and archive all submitted sourced information associated with the competitive intelligence operation.

Information summaries based on current collected information can be distributed prior to the release of the final report if the information requires immediate circulation. These information summaries should be labeled as such and indicate that the final information research operation report will be released in the future.

A central archive should be established to collect and retain all competitive intelligence operation documents.

Each item of research information should be recorded in a central journal, which will be a chronological record of the activities of the information specialist. The journal should also contain a record of all items of incoming information in addition to information requests, reports and information summaries. This will ensure that information will not be overlooked when needed as it is received. It should be segregated for convenience of comparison and study. Each item of information should also be kept together with other items bearing on the same subject.

The journal should be kept as a permanent record and should be looked upon as the main and primary record of competitive intelligence operations. **(23)**

All search activities should be documented for future reference. This includes web related documentation to include URL information.

Each competitive intelligence operation should have all information placed in the appropriate category within the case file.

An electronic copy of each report should be kept in addition to a printed copy of the final competitive intelligence report.

## **Information Resources**

## **Categories Of Competitive Intelligence**

Categories of Information typically needed for competitive intelligence information operations include the following:

- Your Business.
- Your Business Competition.
- Business Market.
- Special Information Category.

## **Your Business**

"Know thyself" is an Ancient Greek adage that is essential to competitive intelligence operations. In desiring to know about others, you must have complete knowledge and understanding of yourself. A comprehensive picture of your business provides the gold standard for information requirements. Making general assumptions or guessing cannot provide a reliable standard necessary for determining what information is required.

### Identity

- Station name.
- Station logo.
- Station mascot.
- Station slogan.
- Keyword usage.
- Meta tag usage.

### Audience Market

- Genre.
- Audience specifics.
  - \* Age.
  - \* Location.
  - \* Language.

### Trend Specifications

- Daily.
- Weekly.
- Monthly.
- Quarterly.
- Yearly.

### Business Model

- Paid Subscription.
- Advertising Supported.

### Distribution methods

- Shoutcast.
- Icecast.
- Adobe Flash.
- Microsoft Media.
- Other.

### Audience Dynamics

- Website search engine rank placement.
- Relative distribution rank placement.
- Other social media outlets.

### Web Technology

- Java.
- HTML.
- Other.

### Audience Reach

- Web site and streaming.
- \* Geographic origin

### Website Review

- Identify strengths.
- Identify weaknesses.

- \* Device used to access content.
- \* Language of user.

### Social Media Review

- Identify strengths.
- Identify weaknesses.

- Website referral.
- Search engine referral.

- Pages accessed.
- Average time on pages.
- Entry page.
- Exit page.

## **Your Business Competition**

It is crucial to determine correctly and accurately what constitutes your business competition. An accurate assessment of what constitutes business competition is necessary for the next step of identifying who your business competition is. Poorly determined criteria can adversely affect information assessments and yield arbitrary results. These arbitrary results can result in poor business planning and inefficient use of business resources.

There are several criteria that are used for determining who your business competition is. It is important to use the whole concept approach when making that determination. Using single elements can yield marginal or incorrect results.

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### Audience Reach

- Web site and streaming.
- \* Audience / visitor trends.

### Website Review

- Identify strengths.
- Identify weaknesses.

### Website referral.

- Search engine referral.

### Social Media Review

- Identify strengths.
- Identify weaknesses.

## **Business Market**

The business market consists of many elements that can interact with a negative or positive influence. It is important to gather information that is both general and specific to your business. Geo-politics can also affect the business market, so it is important to stay abreast of the general situation in your intended audience locations, as well as yours.

- Delivery technology.

- Web technology.

- Internet trends.

- Genre trends.

- Business trends.

- Consumer trends.

- Geo-Political trends.

- Promotional trends.

- Advertising trends.

### **Special Information**

There may be requests for specialized information that is not covered in previous categories.

## **Information Sources**

There are many sources for information research that are simple to use and yield excellent results.

It is important to use all available information resources to provide as much information as possible.

There are several criteria for researching information that include:

- Use all available information resources to provide quality information.
  - \* Quality is preferred over quantity.
- Information should be retrieved from primary / original sources.
- \* Information retrieved from secondary / alternative sources should be cross checked or verified for accuracy.

## **Open Source Intelligence**

Open Source Intelligence (OSINT) is intelligence collected from publicly available sources. The term "open" refers to overt, publicly available sources (as opposed to covert or clandestine sources).

OSINT includes a wide variety of information options and sources that include:

Media, which includes newspapers, magazines, radio, television, and computer-based information.

Web Based Communities and User Generated Content, which include social-networking sites, video sharing sites, wikis, blogs, and forums.

Public Data, which includes government reports, official data such as budgets, demographics, hearings, legislative debates, press conferences, speeches, marine and aeronautical safety warnings, environmental impact statements and contract awards.

Professional and Academic, which includes conferences, symposia, professional associations, academic papers, and subject matter experts. **(24)**

Publicly Available, which includes lawfully seen or heard information noted by any casual observer.

OSINT information collection is typically accomplished through monitoring, data - mining, and research. **(25)**

OSINT is distinguished from research in that it applies the process of intelligence to create tailored knowledge.

## **Social Media and Search Engine Trends**

Social Media and Search Engine trends can provide insight into various trends not covered in the general news.

Here are several resources for active monitoring:

### **Social Media**

#### Icerocket

This service specializes in blogs, Facebook, Twitter, and image sites such as Flickr.

It is free and does not require registration. <http://www.icerocket.com>

#### Social Mention

This service collects aggregated data from multiple platforms such as Facebook, Twitter, YouTube, and photobucket. It provides several features that include:

- Basic analytics that can help determine if postings are positive or negative.
- How many different sources are active.

It is free and does not require registration. <http://www.socialmention.com>

#### Topsy

This service is similar to Icerocket and Social Mention. The primary focus is social media, especially multimedia and blogs.

Registration is not required, but there is an option for creating an email alert.

#### Twitter Trends

This service shows the latest trends from Twitter, for anywhere in the world.

Free account with limited features. <http://www.trendsmap.com/>

#### Youtube Trends

<http://www.youtube.com/trendsmap>

### **Search Engine**

#### Google Trends

<http://www.google.com/trends/>

#### Yahoo Trends

<http://news.yahoo.com/blogs/trending-now/>

#### Google Alerts

This is a basic service that notifies you when a website posts information you have flagged for notification. This service does not always identify everything that is posted on the Internet. It consistently monitors websites but does not monitor social media or blog sites.

You can sign up for the service at <http://www.google.com/alerts>.

(Check "as-it-happens" under "how often" If you wish to be notified instantly.)

## **News Searches**

News can be divided into several categories, which includes business, market, consumer and technology.

Here are some examples:

### Google News

<http://news.google.com>

### Yahoo News

<http://news.search.yahoo.com>

### Bing

<http://www.bing.com/news>

### Enable News Alerts To Be Sent To Your E Mail

<http://support.google.com/alerts/>

<http://info.yahoo.com/privacy/us/yahoo/alerts/details.html>

## **Business Market**

Business research should consist of both general and specific resources for your area business.

Here are some examples:

<http://www.rainnews.com>

<http://www.radioworld.com>

<http://www.radiomagonline.com>

<http://www.ietf.org>

<http://www.irtf.org>

<http://www.edisonresearch.com/category/infinite-dial/>

<http://www.cia.gov/library/publications/the-world-factbook/>

<http://www.iab.net/>

## **Website Performance**

Website performance can be used for both your business web assets as well as your competition web assets.

Here are some examples:

### Online Free SEO tools

<http://www.hubspot.com>

<http://www.woorank.com>

<http://www.seositecheckup.com>

<http://www.internetmarketingninjas.com/tools/>

### Web Site Analysis Service

<http://www.google.com/analytics/>

<http://www.openwebanalytics.com/>

<http://www.awstats.org/>

### Google Heatmaps

- <http://support.google.com/analytics/answer/2558811>

- <http://support.google.com/analytics/answer/2558864>

### Monitor Changes With Competition Websites

- <http://www.archive.org>

### Free website log file analyzer

<http://www.w3perl.com/>

## **Search Engine Searches**

Search Engines are the index card and directory to practically all information located on the Internet.

Here are some examples:

[Advanced Google Search](#)

[http://www.google.com/advanced\\_search](http://www.google.com/advanced_search)

[Advanced Yahoo Search](#)

<http://search.yahoo.com/web/advanced>

[Compare Bing vs. Google Search Results](#)

<http://www.bvsg.org/>

[Compare Yahoo vs. Google search results](#)

<http://www.googleguy.de/google-yahoo/>

## **Search Engine Tips**

Using Search Engines effectively requires skill and knowledge. When you have mastered Search Engine use, then you have mastered knowledge.

### General Tips

It is important to log out of your search engine account. When you are logged into a search engine account, the search results can be altered by previous web searches “weighing” the results of your current web search.

### Search Term Patterns

Use broadly worded search engine terms; then narrow the search engine terms. This can allow you to find data generally not associated with the primary search pattern words used.

Example:

First: Broadcasting

Second: Internet Broadcasting

Third: Internet Broadcasting Shoutcast

### Use Search Terms That Websites Would Use

People typically enter search engine criteria based on normal conversational English. Most websites present textual information in professional business English.

Example:

“How do I install a shoutcast server” could be replaced by “install shoutcast server”

“How do I remove computer viruses” could be replaced by “computer virus removal tools”

### Use Search Criteria That Contain Important Terms

Google matches search criteria with keywords that are used on websites. If too many words are used for search terms, it may limit your results.

Don't use: Where do I find OpenBSD documentation

Instead try: OpenBSD documentation

### Cached Web Pages

If website information has been removed, it may be possible to use the Internet Archive way back machine and retrieve the removed content. The Internet Archive Way Back Machine was created and is used to index all current websites and the majority of past Internet websites.

<http://www.archive.org/web/>

## **The following Search Engine tips are for utilizing the Google Search Engine platform.**

### Explicit Phrase

Put search phrase in quotation marks.

Example: "hurricane katrina"

### Truncation Wild Card

Use an asterisk for truncation (any ending of a term).

Example: communicat\* will find communication, communicates, communicating, communicator, etc.

### Many Keywords

Describe the same concept with several search terms: (movies, film, cinema, motion pictures)

## Search For Any Terms

To search for ANY of a group of terms, use OR and parentheses:

Example: movies OR film OR cinema

## Search for All Terms

To search for ALL terms, use AND.

Example: violence AND movies **(26)**

## File Type

Use the filetype: command or the file format option on the Advanced Search screen to limit your research to particular file types.

Example: -filetype:ppt

## Exclude Pages

Use a minus sign immediately before a term to exclude pages that contain it. The minus sign can also be used with commands to exclude.

Example, a particular site -site:nameofsite.com or a file format -filetype:ppt from your results.

## Include Site

Use this command or use the domain/site box in the advanced search screen to focus the search on a specific site.

Example site:nhs.uk

## Change Order Of Search Words

Change the order in which you enter your search terms. This will change the order in which your results are displayed.

## Repeat Important Terms

As with changing the order of your search terms, this can sometimes significantly alter the order in which the results are displayed.

## Google Scholar

(<http://scholar.google.com>)

Although there are serious limitations to Google Scholar and the advanced search options are unreliable; it can be very useful in tracking down the details of a half remembered reference. The specialist databases do not always retrieve the references in these cases whereas Google Scholar often does.

## Microsoft Academic Search

(<http://academic.research.microsoft.com/>)

Although it does not cover all subjects and has its own quality issues, it is worth looking at Microsoft Academic Search as well.

## Additional Search Options

Use the additional search options in the menu above your results. The options change depending on the type of search (web search, images, news, books) but they are essential to narrowing down your search.

## Country Versions Of Google

The country versions of Google give priority to the country's local content, although it might be in the local language. This is a useful strategy when searching for industries, companies and people that are active in a particular country. Use Google followed by the standard ISO two letter country code, for example:

<http://www.google.de/> for Google Germany  
<http://www.google.no/> for Google Norway

<http://www.google.com/> for Google USA  
<http://www.google.co.uk/> for Google Britain

Apart from presenting your search results in a different order and sometimes displaying different content Google.com is where Google tries out new features. As well as seeing pages that may not be highly ranked in Google.co.uk you will get an idea of the future direction of Google search.

#### Limit By Date

Use the date options to limit your results to the last day, week, month, year or within a custom date range. This tends to work best with blogs and news sources although Google is getting better at identifying dates generally. To see the date options click on 'Search tools' in the menu above your search results, and then on the "Any time" option in the menu that appears.

#### Verbatim

If you want Google to run your search exactly as you have typed it in, click on 'Search tools' in the menu above your results. You should then click on the arrow next to 'All results' and from the drop down menu select Verbatim.

#### Google Art Project

(<http://www.googleartproject.com/> )

This is a collaboration between Google and over 150 galleries from across the world. You can take a virtual tour of a gallery and zoom in on a painting to see the brushstrokes. You can view paintings and drawings by gallery or artist. Warning: highly addictive!

#### Search By Image

Click on the camera icon in the image search bar to upload a photo or link to an image on the web. Google will then try and find similar images. This search feature does not seem to work as well as it used to, but it is still worth a go if you want to find different versions of an image.

#### Numeric Range

Use this for anything to do with numbers - years, temperatures, weights, distances, prices, etc. Use the boxes on the Advanced Search screen or just type in your two numbers separated by two periods as part of your search.

Example: world oil demand forecasts 2015..2030 . **(27)**

#### Similar Words And Synonyms

Search using a primary term that includes results that contain similar words or synonyms.

Example: shoutcast streaming ~cheap

#### Word Definitions

Look up the definition of a word or phrase.

Example: define:plethora

#### Find Pages That Link To Other Pages

Search for web pages that link to a particular web page.

Example: stream host link:shoutcast.com

#### Find Websites That Are Similar To Other Websites

Find websites that are similar.

Example: related:shoutcast.com

#### Specific Search

Google searches web pages containing a particular search term.

Example: intitle:Icecast

## **Suggested Reading**

North Atlantic Treaty Organization - Intelligence Exploitation Of The Internet

North Atlantic Treaty Organization - Open Source Intelligence Reader

North Atlantic Treaty Organization - Open Source Intelligence Handbook

United States Joint Military Training Center - Open Source Intelligence: Professional Handbook

United States National Security Agency - Untangling the Web: A Guide to Internet Research

Center for the Study of Intelligence - Richards J. Heuer, Jr. - Psychology of Intelligence Analysis

Directorate of Intelligence - Style Manual and Writers Guide for Intelligence Publications

US Government- A Tradecraft Primer: Structured Analytic Techniques for Improving Intelligence Analysis

US Dept of Justice - Analyst Toolbox A Tool Box For Intelligence Analyst

Randolph Hock - The Extreme Searcher's Internet Handbook

Sarah Milstein - Google: The Missing Manual 2nd Edition

Michael Porter - Competitive Strategy: Techniques for Analyzing Industries and Competitors

Michael Chesbro - Intel-Cyclopedia

Michael Chesbro - Guide to Sources of Information for Intelligence Officers, Analysts, and Investigators

Ben Benavides - Open Source Intelligence (OSINT) ZoolKit On The Go

Robert David Steele Vivas - Special Operations Forces Open Source Intelligence (OSINT) Handbook

The Society of Competitive Intelligence Professionals - The Competitive Intelligence Handbook

Hubspot - The Marketers Guide To Competitive Intelligence

Health and Community Services Workforce Council, Queensland Australia – GUIDE: An Introduction to Information and Data Collection and Synthesis

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